

**IN THE CLAIMS:**

Please amend the claims as follows:

Claim 1 (Currently Amended): A semiconductor photodetector comprising a semiconductor substrate formed with a plurality of pn junction type photodiodes on a side of the semiconductor substrate opposite from an incident surface of the semiconductor substrate for receiving light to be detected;

wherein a separate region including a pn junction, which is separate from the photodiodes, is formed between photodiodes adjacent each other in the plurality of photodiodes on the side of the semiconductor substrate opposite from the incident surface;

a high-concentration impurity semiconductor region having the same conductivity type as that of the semiconductor substrate is formed between the separate region and the photodiode on the opposite side of the semiconductor substrate;

the high-concentration impurity semiconductor region is formed so as to surround the photodiode as seen from the opposite side;

an electrode electrically connected to the separate region and high-concentration impurity semiconductor region is formed on the opposite side of the semiconductor substrate; and

the electrode is connected to a ground potential.

Claim 2 (Previously Presented): A semiconductor photodetector according to claim 1, wherein the separate region is formed so as to surround the photodiode as seen from the opposite side.

Claims 3-8 (Canceled).

Claim 9 (Original): A semiconductor photodetector according to claim 1, wherein the opposite side of the semiconductor substrate is formed with respective electrodes, each including a bump electrode, electrically connected to the plurality of photodiodes;

the semiconductor photodetector further comprising a support member formed with respective electrode pads, formed on a side facing the semiconductor substrate, corresponding to the plurality of photodiodes; the plurality of photodiodes being electrically connected to the electrode pads corresponding thereto in the support member by way of the respective bump electrode.

Claim 10 (Original): A radiation detecting apparatus comprising the semiconductor photodetector according to claim 1; and

a scintillator, positioned on the incident surface side of the semiconductor substrate, emitting light in response to a radiation incident thereon.

Claim 11 (New): A semiconductor photodetector comprising a semiconductor substrate formed with a plurality of pn junction type photodiodes on a side of the semiconductor substrate opposite from an incident surface of the semiconductor substrate for receiving light to be detected;

wherein a separate region including a pn junction, which is separate from the photodiodes, is formed between photodiodes adjacent each other in the plurality of photodiodes on the side of the semiconductor substrate opposite from the incident surface;

a high-concentration impurity semiconductor region having the same conductivity type as that of the semiconductor substrate is formed between the separate region and the photodiode on the opposite side of the semiconductor substrate;

the high-concentration impurity semiconductor region is formed so as to surround the photodiode as seen from the opposite side;

a first electrode electrically connected to the separate region and a second electrode electrically connected to the high-concentration impurity semiconductor region are formed on the opposite side of the semiconductor substrate; and

the first and second electrodes are connected to respective ground potentials while being electrically insulated from each other.

Claim 12 (New): A semiconductor photodetector according to claim 11, wherein the separate region is formed so as to surround the photodiode as seen from the opposite side.

Claim 13 (New): A semiconductor photodetector according to claim 11, wherein the opposite side of the semiconductor substrate is formed with respective electrodes, each including a bump electrode, electrically connected to the plurality of photodiodes;

the semiconductor photodetector further comprising a support member formed with respective electrode pads, formed on a side facing the semiconductor substrate, corresponding to

the plurality of photodiodes; the plurality of photodiodes being electrically connected to the electrode pads corresponding thereto in the support member by way of the respective bump electrode.

Claim 14 (New): A radiation detecting apparatus comprising the semiconductor photodetector according to claim 11; and  
a scintillator, positioned on the incident surface side of the semiconductor substrate, emitting light in response to a radiation incident thereon.